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SOME CONSIDERATIONS
OF WORD ASSOCIATION TEST RESPONSES
AMONG DEAF CHILDREN

Betsy Frick
Independent Study
1966



On a word association test of the free association type given to deaf children, responses tend to be of the same form class as the stimulus word, with a preponderance of primary responses.

Most research on word associations had utilized some standardized word list such as the Kent-Rosanoff list compiled in 1910¹. The major findings in some selected studies are summarized briefly below:

1. An increase with age has been found among hearing subjects in same form class responses (Ervin, 1961; Brown and Berko, 1960; Palermo and Jenkins, 1964; Entwistle, Forsythe, and Muuss, 1964; Church, 1961; Carroll, 1964).

2. An increase with age has been found among hearing subjects in the numbers of both primary and opposite responses (Palermo and Jenkins, 1964; Pollio, 1964).

3. Superordinate responses tend to peak at the sixth grade level then decline in hearing subjects (Palermo and Jenkins, 1964).

4. Categories of response in deaf children have been found to be more similar to those of hearing adults than hearing children (Kline, 1941).

5. Deaf and hearing subjects respond quite similarly, deaf subjects having a somewhat lower percentage of primary and opposite responses, but an equal percentage of same form class responses (Nunnally and Blanton, 1965; Furth, 1964).

6. School differences have been found to have a greater influence on the responses obtained with deaf children than do age differences (Restaino, 1965).

7. In a forced-choice association test deaf subjects tended to choose fewer evaluative responses than did hearing subjects. Deaf boys chose more detail responses and deaf girls chose more categorical responses (Blanton and Nunnally, 1964).

8. With a few exceptions word association responses for hearing subjects of the same age remain constant over a period

but
these
contradict
each other

of many years (Jenkins and Russell, 1960).

9. More immature responses occurred on word association tests when hearing subjects were pushed to respond quickly (Flavell, Draguns, Fainberg, and Budin, 1958).

10. The background and occupation of a hearing subject as well as the situation in which the test was administered influenced the responses of the subjects (Foley and Macmillan, 1943; Carroll, 1964).

Rather than use the Kent-Rosanoff list, it was decided to select stimulus words from a standardized test to which the children at CID had been recently exposed ². It was felt that the children would have difficulty on the test for several reasons: a) unfamiliarity with the vocabulary involved; b) unfamiliar usages of certain words; c) misunderstood usages of function words.

Several people selected words of presumed difficulty. From this list twenty words were chosen for which there was judged agreement and which were considered amenable to testing.

It was expected that the children's responses would fall into categories; that is, a stimulus word in one form class would elicit a response in the same form class. Fries ³ defines form classes as similar to the parts of speech; Class I words corresponding to nouns and pronouns, Class II words to verbs, Class III to adjectives and Class IV to adverbs. Function words (determiners, conjunctions, etc.) are placed in separate categories according to their use in a sentence.

A large percentage of primary responses, the response most frequently given by a group of subjects, was predicted on the basis of the phenomenon, "one word, one meaning" which has been observed among deaf children. It was planned to analyze responses for form class, number of primary responses and relationship to age and reading level.

Materials:

Stimuli consisted of the twenty words selected from the test plus three practice words and four familiar words. (Table 1.).

Table 1.

Word ListPractice words

grandfather
to visit
pupil

Stimulus wordsNouns (Class I)

folks
spare time
classmates
aunt
secret
meal time
trouble

Verbs (Class II)

to recite
to blame
to cheat
to rule
to boss
to catch a cold
to act up

Adverbs (Class IV)

usually
generally
often
greatly

Adjectives (Class III)

lonesome
a mean person
a new person
unfair

Function words

so much
just a _____

The stimuli were printed on cards. Notepaper and pencils were provided for the children's responses.

Subjects:

Twelve children in two classes in the Rotating and Intermediate Departments at CID were included in the study. Ages ranged from 11-11 to 16-6. Reading levels, based on the American School Achievement Test ⁴ given in March, 1966, ranged from 2.0 to 7.5 on paragraph meaning and sentence and word meaning. All the subjects had normal I.Q.'s, based on the Advanced Performance Scale developed by Dr. Lane at C.I.D.

Procedure:

Prior to word association testing all children in the Rotating Department ^{had been} ~~were~~ given the California Test of Personality.

The subjects were tested individually in the children's library during hours when they were not in classes. Testing time averaged twenty minutes per child. In order to place the

children at ease, the testing situation was made as informal and encouraging as possible; the subjects were told that they were helping the experimenter with a college class but no specific mention was made of the personality test.

Instructions as follows were given orally and were written on a card: 1. Look at the word on the card.

2. What is the first word you think of?

3. Write that word.

Auxiliary directions were given whenever a subject had difficulty responding. For instance,

1. What does _____ mean? Can you write that?

2. Can you use another word for that?

3. That's fine, Give me another.

In addition, several alternatives were followed when children seemed to be having difficulty or asked for help:

1. repetition or writing down what the child said,

The child was encouraged to agree or not.

2. spelling help

3. acceptance of any response and encouragement to respond in some way to each stimulus

4. use of the stimulus word in a sentence.

The cards, except for the three practice words, were randomized before each presentation. After each child was tested, the stimulus word, number in the sequence and notations of assistance provided by the experimenter were written on each response sheet. Each group of responses was labeled for analysis with the child's name, class, reaction to the situation and the date of the test.

Analysis:

Responses were tallied, analyzed for form class and number of primary responses and ranked in order of homogeneity (see Tables 2, and 3). A judgment by the experimenter was made as to the logical relevancy of responses, taking into account the sentences used in order to get the subjects to respond.

Results:

The subjects seemed to understand the task, were willing and cooperative and, with one or two exceptions, appeared not to be frustrated by any inability to respond. They appeared to be giving oral responses before writing for the approval of the experimenter, that is, to verify the acceptability of their responses. Oral responses were given mainly on stimulus words to which the subjects had difficulty responding.

In general, the older subjects gave a greater number of "correct," that is, logically relevant, responses. They also responded more rapidly and required less assistance from the experimenter.

A predominance of primary responses was not found, except for the stimulus words, "pupil," "meal time," "to blame," "greatly" and "unfair." A ranking of homogeneity of response was made but differed so little from the overall tally of responses in Table 2 that it was not included in the final results. When correct and incorrect (not logically relevant) responses are considered together, same form class responses were most common. However, if only relevant responses are taken, phrases tended to occur most frequently.

More incorrect than correct responses were given to the following stimulus words: "spare time," "to recite," "to blame," "to boss," "to act up," and "just a ____." The younger subjects gave almost no relevant responses to "spare time," "just a ____," "generally," "to boss," and "usually."

The difficulty with "a new person" may be attributed to the fact that the subjects were reacting to the entire phrase rather than the adjective, "new." All subjects except one ignored the adverbial ending of "greatly" and responded to it as if it were an adjective. The same occurred for two subjects on "generally." Otherwise, subjects responded, or attempted to respond, to the actual form class of the stimulus words.

Good summary

Discussion and Summary:

This list of difficult words was chosen to determine the type of responses which a group of deaf children would give. It is probable that the difficulty of the stimuli caused results which were different than those hypothesized.

The lack of definite primary responses may be explained on the basis of three factors: 1) The small group tested, 2) The unfamiliarity of the stimulus words and, 3) The absence of the "one word, one meaning" phenomena. Had the first two factors been eliminated, the third would undoubtedly not have been in evidence.

During vocabulary exercises at C.I.D., pupils are asked to give definitions or to tell what a word means. This educational procedure may well have been a factor in the number of phrase responses given. The subjects also were not required to give one word responses, but were encouraged to respond in any way they could. Subjects often wrote a phrase for words with which they had difficulty or wrote a phrase then a single word when the experimenter asked them if they could think of another word.

The differences in performance between classes seemed largely to be a function of age, the older children giving more relevant and same form class responses and finding the task easier, judging by the speed of responses. Reading level for the older group averaged one and a half years ahead of the younger group, although there was an overlap. Examination of individual performances and individual reading levels does not show as close a relationship as does performance and average reading level for a whole class. For example, the child with the highest reading level in the younger group became the most frustrated at having difficulty responding to several stimuli. A child in the older group with a below-average reading level gave the easiest and most correct responses. Personality differences and reaction to the testing situation should be considered in individual performances.

The results of this study give indications of where deaf children can be expected to have difficulty on the personality test from which the stimulus words were taken. Unexpected responses

on the test may in part result from lack of understanding of a question because of an unfamiliar word contained in it.

Words included in this study and other similar words have been found to cause deaf children difficulty in many situations, particularly when they occur in test directions and questions. It would be to the children's advantage if greater efforts were made to teach them different meanings and usages of, especially, verbs, adverbs, adjectives and function words such as those appearing in this study.

Table 2.

<u>Stimulus</u>	<u>Tally of Responses</u> *	<u>Younger Group</u>
<u>practice words</u>		
pupil	Debra student (4) a person who goes to school student of a school	person children (2) day pupil a deaf people
to visit	zoo to watch to meet to come Hi to come and see someone	to see (2) talk to come to work to see other people
grandfather	any father father my parent's father my dad's papa my parent's papa relative my father's or mother's father	after father grandmother (2) the old father father's father
<u>nouns</u> <u>folks</u>	parents (3) friends people my friends or family	people parents house fault friends
spare time	extra time free time another time (2) leisure two times	travel good time night time sometimes almost time
classmates	friend friends in my class (2) people who are in my class friendship of class my class	friends tell us rules my class class Lynne, Blake, Pat and Dana are classmate
aunt	uncle my mother's sister (2) my parent's sister	like cousins uncle aunt mother

* NUMBER IN () INDICATES
NUMBER OF CHILDREN
GIVING SAME RESPONSE

	relative my father's or mother's sister	mother's sister cousins
secret	deodorant gossip don't tell anybody anything that you can't tell anybody things that won't tell anyone spy something that other people don't know about	nobody don't tell a command tells something secret not to tell anybody
meal time	lunch (3) supper (4) lunch time supper time breakfast time breakfast (2) the time we eat	time to eat breakfast time supper breakfast hungry time
trouble	peace problems naughty (2) bad thing bad luck to control the wrong way	didn't mean to mean very sloppy trouble terrible awful
<u>verbs</u> to recite	to make up to read (2) to bring to receive to talk	to talk good speech to read to draw
to blame	argue (2) to argue (2) to be ashamed angry talk angrily to fuss	mean to talk to tell someone to find to look to flash bulbs When Jon talk to me and teacher were mad at me. I blamed.
to cheat	to peep to peak (peek) not fair (2) not right	unfair tell a lie to have to write very hard

	to copy unfair to do something wrong	lost to loose When somebody have clock I don't have it. I cheat Mary.
to rule	to make laws(2) to boss to law to obey	to obey to play on trick to write a lime to kill Don't run the hall
to boss	to teach smarty to rule (2) to hire to brag	to tell something to to store our job to head
to catch a cold	sick to get a cold to get illness bad cold to have a cold	sick to give a cold my noise (nose) to get a cold cold to have a cold
to act up	to show up to straight up to play to show proud to do something that is important	to pay attention to look up to wake up to pick up big boy not baby to get up
<u>adverbs</u> usually	sometimes (3) most of the time occasionally really every year	right away always have has usually funny copy
generally	usually regually (regularly) nice slowly nice person greatly	doing work get sometimes after school
often	all the time always many times (3) many sometimes usually	a lot all the time while how long almost every day

greatly

huge
big (2)
wonderful (3)
good
famous
very

wonderful
good time
goodly
big
beautiful

adjectives
lonesome

fun
alone
lonely (2)
myself
by myself or
yourself

by himself
alone
lost
lost some
sometimes
most

a mean person

nice
bad
rude
not nice to anyone
bully
ruffian
angry person
an angry parson

a thief
a cross person
a mean boy
a bad boy
a fierce man
kind

a new person

new people (2)
a new pupil
stranger
a stranger
newcomer
a person who goes
to a new town or
school

a kind person
visitor
a new person
a new people (2)
new man
adults

unfair

not fair (5)
cheat
not right

cheat
not fair (2)
fair
not good

function words
so much

many (2)
very much
so many
very
too much (2)
too many
a lot
more

a lot
very much
so much
too much
to much
too many

just a _____

only (3)
about
merely
not many
one thing

finish
must
book
I'm just fine
a food
your

Table 3.

Relevant and Irrelevant Responses

<u>Stimulus</u>	<u>Relevant response in same form class</u>	<u>Relevant response in different form class or phrase</u>	<u>Irrelevant response</u>
pupil	Debra student children people person	a person who goes to school	a deaf
to visit	to see to come to meet talk	zoo Hi to come and see someone to see other people	to watch to work
grandfather	father relative grandmother	after father the old father father's father my parent's father my dad's papa my parent's papa my mother's or father's father	any father
folks	parents people friends	my friends or family	house fault
spare time	extra time free time leisure	travel	another time good time night time sometimes almost time two times

classmates

friends
friend
class

tell us rules

aunt

uncle
relative
cousins

aunt: mother

secret

deodorant
gossip
spy

nobody
a command

meal time

lunch
supper
breakfast
lunch time
supper time
breakfast time
hungry time

trouble

peace
problems
naughty
trouble

to control
very sloppy

Lynn, Pat, Blake and
Dana are classmate
my class
friends in my class
people in my class
friendship of class

my mother's sister
my parent's sister
my father's or mother's
sister
mother's sister
like cousins

tells something secret
not to tell anybody
don't tell anybody
anything that you don't
tell anybody
things that won't tell
anyone
something that other
people don't know about

time to eat
the time we eat

bad thing
bad luck
the wrong way
didn't mean to
mean
terrible
awful

to recite

to read
to talk

to blame

argue
to argue
to fuss
to be ashamed

to cheat

to peep
to peak (peek)
to copy

to rule

to boss
to make laws

to boss

to rule
to hire
to head
to brag

to catch a cold

to get illness
to get a cold
to have a cold
to give a cold

to act up

to play

good speech

to make up
to draw
to bring
to receive

angry
When Jon talk to
me and teacher
were mad at me.
I blamed.

tell someone
to find
to look
to flash bulbs
mean to
talk angrily

not fair
not right
to do something
wrong
unfair
tell a lie
I cheat Mary

to write very hard
lost
to loose
When somebody have clock
I don't have it.

to law
to write a line

to play on trick
Don't run the hall
to kill

smarty
to tell something

to teach
to
to store
our job

sick
bad cold
cold
my noise (nose)

to show up
to straight up
to show
proud
to do something that
is important
to pay attention

to get up
to look up
to wake up
to pick up
big boy
not baby

usually

sometimes
usually
occasionally
always

generally

usually
regularly (*regularly*)
sometimes
greatly

often

always
many
sometimes
usually
how long

greatly

very

lonesome

fun
alone
lonely
lost
lost some

a mean person

a thief
a cross person
a bad boy
a fierce man
kind
nice
bad
rude

most of the time

nice
nice person

all the time
many times
a lot
almost every day

huge
big
wonderful
good time
famous
beautiful

myself
by myself or
yourself
by himself
sometimes

really funny
every year copy
right away has
always
have
slowly
after school
doing
work
get
while

most

a mean boy

bully
ruffian
angry person
an angry person

a new person

unfair

so much

just a —

a person who goes to a
new town or school

cheat

very
many
more

a kind person
adults
new people
a new pupil
a new person
a new people
new man

not many
one thing
must
finish
book
I'm just fine
a food
your

Footnotes

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